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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,606	06/23/2003	Christopher Dube	DR-352J	8958

7590

10/25/2005

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EXAMINER
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FOX, JOHN C

ART UNIT	PAPER NUMBER
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3753

DATE MAILED: 10/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/601,606	Applicant(s) DUBE ET AL.	
	Examiner John Fox	Art Unit 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-65 is/are pending in the application.
- 4a) Of the above claim(s) 46-65 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Claims 46-65 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on March 24, 2005.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-3, 9, 11, 13, 15-17, 19, 21-22, 34-36, 38-41, 44-45 are rejected under 35 U.S.C. 102(b) as being anticipated by Zdeblick.

Zdeblick teaches a microfluidic valve or sensor with associated electronic circuitry on the same substrate or wafer, see column 4, lines 29-45. Such apparatus includes heat transfer and may be termed a dispenser in that there is an outlet for the valved fluid.

Applicant's arguments have been fully considered but they are not persuasive. The substrates with fluid channels shown by Zdeblick fairly respond to the claimed support platform, the valve is an electrofluidic component and the disclosed electronic circuitry fairly responds to the claimed electronic control system.

Claims 10, 12, 14, 18, 20, 23-33, 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zdeblick.

The components recited are known in fluid handling systems, and in microfluidic systems, and it would have been obvious for one of ordinary skill in the art at the time the invention was made to have used them with the microfluidic valve of Zdeblick. The sizing of the valve to handle the amount recited in claims 42-43 is considered to be an obvious matter of design choice in view of the state of the art.

Claims 1 and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Morse et al.

Morse et al show a laminar MEMS fuel cell with electric connections imbedded therein.

Applicant's arguments have been fully considered but they are not persuasive. Similar to Zdeblick, the Examiner believes the very broad claims are fairly met by the reference.

Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Barth et al.

Barth et al show a microfluidic device as claimed including a Kapton film.

Applicant's arguments have been fully considered but they are not persuasive. Similar to Zdeblick, the Examiner believes the very broad claims are fairly met by the reference.

Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zdeblick in view of Bergstresser et al.

Zdeblick shows the claimed device except for the materials recited. Bergstresser et al teach a circuit board with a phenolic resin adhesive. It would have been obvious for one of ordinary skill in the art at the time the invention was made to have used such a resin to adhere the layers of the valve of Zdeblick. The use of a commercially available resin, R/FLEX, is considered an obvious matter of choice, as is the deposition depth. The recitation of "etched" in claim 7 relates to a method of manufacture and is not given

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weight in the apparatus claim. As to claim 8, the step of not bonding areas that are not supposed to be bonded is considered an obvious expedient.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Fox whose telephone number is 571-272-4912. The examiner can normally be reached on Increased Flextime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Mancene can be reached on 571-272-4930. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John Fox  
Primary Examiner  
Art Unit 3753